Amendments to the Claims

Please amend Claims 1 and 49, cancel Claims 27 and 44-47; and add new Claims 50-52, all as shown below. Applicant respectfully reserves the right to reinstate and prosecute any originally presented, canceled or amended claims in a continuing or future application.

1. (Currently Amended) A computer-readable storage medium containing instructions stored thereon, which when read and executed by a plurality of computers cause the plurality of computers to perform steps comprising:

receiving, at an administrative server, an MBean definition file in a markup language format;

generating, at the administrative server, an MBean archive file from the MBean definition file~~, wherein the MBean archive file includes a tag for an MBean and a tag for each attribute, operation, and potential notification issued by the MBean~~;

sending the archive file from the administrative server to a managed server in a management domain, wherein the management domain is a collection of distributed servers that are managed as a unit, and wherein the managed server contains a logical canonical server used as a proxy for accessing an MBean server located on the managed server;

using the archive file to instantiate ~~the~~ a custom MBean upon the managed server, said custom MBean being customized for the managed server;

receiving a request for the MBean at a server residing in the management domain;

determining a scope of the MBean, said scope having been specified in the MBean definition file or on a specific instance upon creation of said MBean, wherein the scope of the MBean is set to be either server-specific for the managed server or shared in the management domain, wherein the scope of the MBean is the set of locations at which the MBean is available, such that the MBean is unavailable to servers located outside of said scope of said MBean, wherein the managed server contains copies of the MBeans scoped server-specific to the managed server, and wherein the administration server contains copies of MBeans shared in the management domain and further contains an MBean index of all server-specific MBeans and all shareable MBeans; ~~and~~

handling said request by said a server in the management domain; wherein if the MBean is of server-specific scope and unavailable to the server receiving the request, said server receiving the request invokes a method to access the MBean index and accesses the logical canonical server corresponding to the managed server that the server-specific MBean resides on based on said

MBean index; and

providing a custom management capability through the MBean ~~over the management domain, wherein if the MBean is scoped to be server-specific to the managed server, applications and servers must access the specific managed server to read the MBean in order to invoke the custom management capability~~.

2 – 17. (Canceled)

18. (Currently Amended) The computer-readable storage medium of claim 1, wherein the custom management capability tracks changes to MBeans throughout the management domain.

19. (Currently Amended) The computer-readable storage medium of claim 1, wherein each server node has a MBean server.

20. (Currently Amended) The computer-readable storage medium of claim 1, wherein the custom management capability provides an API for providing management services in the management domain.

21. (Currently Amended) The computer-readable storage medium of claim 1, wherein the custom management capability is customized by a user by adding schema attributes and extended persistence features.

22. (Currently Amended) The computer-readable storage medium of claim 1, wherein the custom management capability is packaged as a framework with multiple MBeans which a security provider can extend.

23. (Currently Amended) The computer-readable storage medium of claim 1, wherein [[a]] the MBean is accessed through a type MBean stub.

24. (Currently Amended) The computer-readable storage medium of claim 23, wherein an MBean stub provides a reference to a java object which implements an interface specific to the MBean.

25. (Canceled)

26. (Currently Amended) The computer-readable storage medium of claim 1, wherein a factory model is provided for creating MBean instances.

27. (Canceled)

28. (Currently Amended) The computer-readable storage medium of claim 1, wherein MBeans that are declared to be persistent are automatically saved to a repository.

29. (Currently Amended) The computer-readable storage medium of claim 1, wherein each MBean is stored in a separate file and is shadowed for failsafe writes.

30. (Currently Amended) The computer-readable storage medium of claim 1, wherein the tag for each attribute includes name, package, persist policy, persist period, description, and display name.

31. (Currently Amended) The computer-readable storage medium of claim 1, wherein the operation definition tag includes a sub-tag instance for each argument of the operation.

32. (Currently Amended) The computer-readable storage medium of claim 31, wherein attributes for the sub-tag instance are name and type.

33. (Currently Amended) The computer-readable storage medium of claim 1, wherein a notification definition tag includes name, severity, and display name.

34. (Currently Amended) The computer-readable storage medium of claim 1, wherein a local MBean server handles read attribute requests and MBean creation and deletion requests for server specific MBeans.

35. (Currently Amended) The computer-readable storage medium of claim 34, wherein an

MBean Server Proxy routes read access to an appropriate server and MBean instance within the appropriate server and routes write accesses to the corresponding MBean instance on the administration server.

36. (Canceled)

37. (Currently Amended) The computer-readable storage medium of claim 1, wherein changes to [[an]] the MBean are propagated from [[an]] the administration server to all servers within the scope of the MBean.

38. (Canceled)

39. (Currently Amended) The computer-readable storage medium of claim 1, wherein all MBeans residing on [[a]] the managed server are stored in the managed server's local repository in addition to the administration server's repository.

40. – 41. (Canceled)

42. (Currently Amended) The computer-readable storage medium of claim 1, wherein the scope is stored in an MBean information structure.

43 – 47. (Canceled)

48. (Previously Presented) The computer-readable storage medium of claim 1, wherein ~~an~~ the administration server handles attribute writes and MBean creation and deletion requests for sharable MBeans.

49. (Currently Amended) A method for providing custom management capabilities across a management domain of distributed servers, said method comprising:

receiving, at an administrative server, an MBean definition file in a markup language format;

generating, at the administrative server, an MBean archive file from the MBean definition file~~, wherein the MBean archive file includes a tag for an MBean and a tag for each attribute,~~

~~operation, and potential notification issued by the MBean~~;

sending the archive file from the administrative server to a managed server in a management domain, wherein the management domain is a collection of distributed servers that are managed as a unit, and wherein the managed server contains a logical canonical server used as a proxy for accessing an MBean server located on the managed server;

using the archive file to instantiate ~~the~~ a custom MBean upon the managed server, said custom MBean being customized for the managed server;

receiving a request for the MBean at a server residing in the management domain;

determining a scope of the MBean, said scope having been specified in the MBean definition file or on a specific instance upon creation of said MBean, wherein the scope of the MBean is set to be either server-specific for the managed server or shared in the management domain, wherein the scope of the MBean is the set of locations at which the MBean is available, such that the MBean is unavailable to servers located outside of said scope of said MBean, wherein the managed server contains copies of the MBeans scoped server-specific to the managed server, and wherein the administration server contains copies of MBeans shared in the management domain and further contains an MBean index of all server-specific MBeans and all shareable MBeans; ~~and~~

handling said request by said a server in the management domain; wherein if the MBean is of server-specific scope and unavailable to the server receiving the request, said server receiving the request invokes a method to access the MBean index and accesses the logical canonical server corresponding to the managed server that the server-specific MBean resides on based on said MBean index; and

providing a custom management capability through the MBean ~~over the management domain, wherein if the MBean is scoped to be server-specific to the managed server, applications and servers must access the specific managed server to read the MBean in order to invoke the custom management capability~~.

50. (New) The computer-readable storage medium of claim 1, wherein the MBean in the management domain has a single network identity.

51. (New) The computer-readable storage medium of claim 1, wherein applications requiring an enhanced isolation levels for MBean data are served using an MBean delegate, wherein the MBean

delegate is identical to the MBean at creation, wherein after creation, the MBean delegate can be changed directly, wherein if the MBean is changed after creation of the MBean delegate, the MBean delegate is automatically updated with the changes unless the modified value caused by the changes has been specifically altered in the MBean delegate.

52. (New) The computer-readable storage medium of Claim 51, wherein the MBean delegate has identical attributes and operations as the MBean but is restricted to being within a subset of the scope of the MBean.